
GYNAECOLOGY

Dysmenorrhea in Thai Secondary School Students in Khon Kaen, Thailand

Yaowapa Chongpensuklert MD,*
Srinaree Kaewrudee MD,*
Sukree Soontrapa MD,*
Chuanchom Sakondhavut MD.*

**Department of Obstetrics and Gynecology, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand*

ABSTRACT

Objective To determine the prevalence of dysmenorrhea among Thai secondary school students, impact on educational activities and the methods of pain relief.

Design Cross-sectional, descriptive study.

Setting Three secondary schools in Khon Kaen, Northeast Thailand.

Material and Method A total of 575 female students-attending grade 10, 11 or 12 at one of three secondary schools- completed a four-page questionnaire, which included baseline characteristics, menstrual pattern, associated symptoms, severity of dysmenorrhea, impact of dysmenorrhea on educational activities and the experience of pain relief.

Results The prevalence of dysmenorrhea was 84.9%. About eleven percent had mild dysmenorrhea, 62.3% had moderate and 25.8% had severe dysmenorrhea. The three most common associated symptoms were mood change (84.8%), fatigue (70.7%) and backache (63.7%). Three-quarters (74%) of the dysmenorrheic students reported that their ability to concentrate in class was reduced and 18.2% were absent from school because of it. Most affected students (89.3%) had to take a rest for pain relief. Regarding medications, 73.4% of students used acetaminophen while 16.4% used mefenamic acid.

Conclusion There is a high prevalence of dysmenorrhea among Thai secondary school students. The condition has a negative impact on educational activities. Most sufferers used acetaminophen to treat their symptoms.

Keywords: Acetaminophen, Dysmenorrhea, Mefenamic acid, Secondary school, Thai adolescents

Introduction

Dysmenorrhea, which is defined as a painful menstruation, is the most common gynecologic complaint among adolescents and young adult women.⁽¹⁾ The prevalence varies from 20 to 90 percent, depending on the measurement method used and study population.⁽²⁻⁴⁾ The highest

prevalence of dysmenorrhea has been reported in adolescent women.^(5,6) The prevalence of severe dysmenorrhea in adolescent women ranges from 5 – 23 percent.^(2,6-12)

In the United States (U.S.), the results of many studies have shown that dysmenorrhea is the leading cause of recurrent short-term school absenteeism in

adolescent girls.^(3,7) A study from Singapore, an Asian Country, also reported the high impact of dysmenorrhea on women's ability to perform work.⁽¹³⁾ Moreover, there is evidence to suggest that dysmenorrhea may impact adolescents more than adult women due to under-treatment.^(7,14) Klein reported that only 14% of the adolescents with dysmenorrhea sought help from a physician, including only 29% of those reporting severe dysmenorrhea.⁽⁷⁾ A school-based survey of 182 adolescent girls revealed that 73% experienced dysmenorrhea, but only 16% had spoken to a doctor or nurse about their pain, including only 26% of those who reported missing school or work because of cramps.⁽¹⁴⁾

In Thailand, there is a study concerning the prevalence of dysmenorrhea in the 1st and 2nd year university students.⁽¹⁵⁾ The results also showed the high prevalence of dysmenorrhea. This was up to 84.2%.⁽¹⁵⁾ Of more than 60% of dysmenorrheic women, class concentration was affected by the symptom. This cross-sectional study was aimed to determine the prevalence of dysmenorrhea in Thai secondary school students, which are younger than those of the former study. Furthermore, the associated symptoms, the impact on education and treatment remedies would be investigated.

Materials and Methods

The study was conducted from 1st June to 31st August 2006 at three secondary schools, i.e. Demonstration School of Khon Kaen University, Kulayanawut School and Khamkaenwittaya School, in Khon Kaen Province, Northeast Thailand with approval from the Ethics Committee at Faculty of Medicine, Khon Kaen University. Grade 10 to 12 students who had already had menstruation were recruited. Women who had amenorrhea and had history of abdominal or pelvic surgery were excluded. All included subjects gave written informed consent.

A total of 589 students were asked to complete the anonymous questionnaire handed out by the researchers. Definition of dysmenorrhea was explained as any type of pain or discomfort

associated with menstrual period. The questionnaire included data regarding baseline characteristics, menstrual pattern, associated symptoms (including nausea, headache, edema and diarrhea), severity of dysmenorrhea, impact on educational activities and the methods of pain relief. The grade of dysmenorrhea was classified as mild, moderate and severe. Mild dysmenorrhea was defined as a perception of pain or discomfort associated with menstrual period without the need of any treatment for pain relief. Moderate degree was defined as the pain that needed any treatment for pain relief but did not affect daily activity. If dysmenorrheic students needed any treatment for pain relief and the dysmenorrhea limited their activities, this symptom would be classified as severe.

The data were analyzed using SPSS for Windows version 11.1. Descriptive statistics were used to determine mean age, mean age at menarche, prevalence of dysmenorrhea, activities affected by this condition, reported as mean value \pm standard deviation(SD), number and percentage. The level of statistical significant was chosen as $p < 0.05$.

Results

The questionnaires were distributed to 589 female students and 575 (97.6%) completed it. The prevalence of dysmenorrhea was 84.9% (95%CI 81-88%) and only 15.1% had no experience of dysmenorrhea. Most of the study population experienced moderate and severe dysmenorrhea, that were 304 (62.3%) and 126 (25.8%), respectively. Only 58 (11.9%) had mild dysmenorrhea. Three symptoms that most commonly associated with dysmenorrhea were mood change (84.8%), fatigue (70.7%) and backache (63.7%) (Table 1).

Table 2 shows the impact of dysmenorrhea on activities of affecting women. More than 73.9% of dysmenorrheic women reported that their class concentration was effected, especially in severe dysmenorrhea. Absence from school was reported in 18.2% of the dysmenorrheic students. Most of the students for whom dysmenorrhea affected their activities were in the moderate and severe groups.

Table 3 shows the management strategies for dysmenorrhea. Approximately eighty-nine percent of the students with dysmenorrhea had to take a rest and 77.9% used oral analgesics for pain relief. According to the types of the medications, 73.4%, 16.4% and 0.6% of students used acetaminophen, mefenamic acid and oral contraceptives, respectively. With regard to the information on the person whom dysmenorrheic students consulted for

the management of dysmenorrhea, most of them consulted their parents while only 5.7% consulted a physician.

Table 4 demonstrates comparison between those with and without dysmenorrhea with regard to various factors. Mean age at menarche, body mass index (BMI) and menstrual pattern were similar in both groups. None of these factors were found to be associated with menstrual cramps.

Table 1. Percentage of dysmenorrheic students suffering from associated symptoms*

Symptoms	Students with dysmenorrhea [n = 488]
	n* (%)
• Mood change	414 (84.8%)
• Fatigue	345 (70.7%)
• Backache	311 (63.7%)
• Headache	183 (37.5%)
• Edema	140 (28.7%)
• Diarrhea	100 (20.5%)
• Nausea	55 (11.3%)
• Others	30 (6.1%)

*More than one symptom/student

Table 2. Impact of dysmenorrhea on educational activities*

	Students with dysmenorrhea n* = 488	Mild dysmenorrhea n* = 58	Moderate dysmenorrhea n* = 304	Severe dysmenorrhea n* = 126
- Poor classroom concentration	361(73.9%)	22(37.9%)	226(74.3%)	113(89.7%)
- Limited sports activities	292(59.8%)	21(36.2%)	169(55.6%)	102(80.9%)
- Limited social activities	137(28.1%)	8(13.8%)	77(25.3%)	52(41.3%)
- Absences from school	89(18.2%)	0(0%)	26(8.5%)	63(50%)

* More than one activity/student

Table 3. Methods for pain relief

	n (%)
Management strategy	
Rest	436 (89.3%)
Oral analgesic	380 (77.9%)
Heating pad	145 (29.7%)
Analgesic injection	5 (1.0%)
Usage of medications	
Acetaminophen	358 (73.4%)
Mefenamic acid	80 (16.4%)
Traditional medicine	61 (12.5%)
Aspirin	59 (12.1%)
Ibuprofen	16 (3.3%)
Oral contraceptives	3 (0.6%)

Table 4. Baseline characteristics of participants

Parameters	Students with dysmenorrhea	Students without dysmenorrhea
Mean age (year)	16.93 ± 1.05	16.55 ± 1.12
Mean age at menarche (year)	12.54 ± 1.12	12.79 ± 1.13
BMI	19.41 ± 2.68	20.20 ± 3.17
Duration of mens(days)		
• <7	382(82.0%)	59(72.8%)
• ≥ 7	84(18.0%)	22(27.2%)
Interval of mens(days)		
• < 21	2(0.9%)	1(2.6%)
• 21-34	218(96.0%)	36(94.7%)
• ≥ 35	7(3.1%)	1(2.6%)
Amount of bleeding (pad/day)		
• 1	3(0.6%)	3(3.4%)
• 2-4	457(95.0%)	79(90.8%)
• > 4	21(4.4%)	5(5.7%)

Discussion

In this study, the prevalence of dysmenorrhea in Thai secondary school students in Khon Kaen Province was 84.9%. When comparing this prevalence to the another study that conducted in Thai population, this prevalence was similar to that of Tangchai's study although the mean age of our participants was less than that of the participants in Tangchai's study.⁽¹⁵⁾ This prevalence was also comparable to those of other studies that conducted in the populations of similar ages.^(3,16)

Dysmenorrhea is known to comprise a wide variety of physical and affective symptoms. Three symptoms that most commonly associated with dysmenorrhea in our study were mood change (84.8%), fatigue (70.7%) and backache (63.7%). In consistent with our findings, other studies also reported the similar associated symptoms.^(3,15,16)

Our study showed that the prevalence of poorer classroom concentration was reported from 37.9% in the mild dysmenorrheic women to 89.7% in severe dysmenorrheic women. These findings were similar to those of the others studies.^(3,15,16) School absenteeism due to dysmenorrhea was 18.2% among dysmenorrheic subjects ranging from 8.5% in the moderate group to 50% in the severe group which was consistent with the previous study in the U.S.⁽⁷⁾ Other impacts of dysmenorrhea, such as limitation of social and sport activities, were also identified in our study.

Non-steroidal anti-inflammatory agents (NSAIDs) and oral contraceptives are regarded as the most effective treatments; however, small numbers of our participants used them.⁽¹⁷⁻²⁴⁾ The most common analgesic drug use in our study was acetaminophen. This was not surprised. Other studies also reported acetaminophen as the most commonly medication for pain relief.^(15,16) Acetaminophen is widely spread over the counter in every pharmacy and has no gastrointestinal side effect.

In our study, most of students with dysmenorrhea consulted their parents to solve their

problems while only 5.7% consulted a doctor. This low rate was similar to that of the previous report.⁽¹⁵⁾

The results of our study emphasize the high prevalence of dysmenorrhea in Thai adolescent women and its impact on their activities. Although we explained the meaning of each classification of pain severity to the participants, use of a validated questionnaire would provide more accurate measurement of pain severity and reduce potential misclassification. Because we primarily aimed to determine the prevalence of dysmenorrhea, the sample size was not adequate to ascertain the attributed factor to pain and educational burden. For clinical implication of the study, active education for adolescent women regarding general knowledge and treatment of dysmenorrhea would be of advantage. To specify the more proper strategy for reducing pain severity and its educational burden, further research onto the contributing factors would be warranted.

Conclusion

Dysmenorrhea has a high prevalence and pronounced impact on the educational activities among Thai adolescents that requires attention. It is not only a gynecologic but also a public health and social problem. Both students and healthcare providers need to be made aware that dysmenorrhea is no longer considered an acceptable female experience. Knowledge about dysmenorrhea and appropriate medications should be given in the school health program. Our study was designed to be used as baseline for future studies leading to good practice of pain relief in adolescents.

Acknowledgment

This study was supported by Faculty of Medicine, Khon Kaen University. The author wishes to thank Ass. Prof. Woraluk Somboonporn for her review and English presentation of the manuscript.

References

1. Harel Z. Dysmenorrhea in adolescents and young adults: etiology and management. *J Pediatr Adolesc*

- Gynecol 2006;19:363-71.
2. Davis AR, Westhoff CL. Primary dysmenorrhea in adolescent girls and treatment with oral contraceptives. *J Pediatr Adolesc Gynecol* 2001; 14:3-8.
3. Banikarim C, Chacko MR, Kelder SH. Prevalence and impact of dysmenorrhea on Hispanic female adolescents. *Arch Pediatr Adolesc Med* 2000;154:1226-9.
4. Strinic T, Bukovic D, Pavelic L, ajdic J, erman I, tipic I. Anthropological and clinical characteristics in adolescent women with dysmenorrhea. *Coll Antropol* 2003;27:707-11.
5. Sundell G, Milsom I, Andersch B. Factors influencing the prevalence and severity of dysmenorrhoea in young women. *Br J Obstet Gynaecol* 1990;97:588-94.
6. Harlow SD, Park M. A longitudinal study of risk factors for the occurrence, duration and severity of menstrual cramps in a cohort of college women. *Br J Obstet Gynaecol* 1996;103:1134-42.
7. Klein JR, Litt IF. Epidemiology of adolescent dysmenorrhea. *Pediatrics* 1981;68:661-4.
8. Andersch B, Milsom I. An epidemiologic study of young women with dysmenorrhea. *Am J Obstet Gynecol* 1982;144:655-60.
9. Svanberg L, Ulmsten U. The incidence of primary dysmenorrhea in teenagers. *Arch Gynecol* 1981;230:173-7.
10. Wilson CA, Keyes WR, Jr. A survey of adolescent dysmenorrhea and premenstrual symptom frequency. A model program for prevention, detection, and treatment. *J Adolesc Health Care* 1989;10:317-22.
11. Robinson JC, Plichta S, Weisman CS, Nathanson CA, Ensminger M. Dysmenorrhea and use of oral contraceptives in adolescent women attending a family planning clinic. *Am J Obstet Gynecol* 1992;166:578-83.
12. Campbell MA, McGrath PJ. Use of medication by adolescents for the management of menstrual discomfort. *Arch Pediatr Adolesc Med* 1997;151: 905-13.
13. Ng TP, Tan NC, Wansaicheong GK. A prevalence study of dysmenorrhoea in female residents aged 15-54 years in Clementi Town, Singapore. *Ann Acad Med Singapore* 1992;21:323-7.
14. Johnson J. Level of knowledge among adolescent girls regarding effective treatment for dysmenorrhea. *J Adolesc Health Care* 1988;9:398-402.
15. Tangchai K, Titapant V. Dysmenorrhea in Thai Adolescents: Prevalence, Impact and Knowledge of Treatment. *J Med Assoc Thai* 2004;87(Suppl 3): S69-S73.
16. Hillen TI, Grbavac SL, Johnston PJ, Straton JA, Keogh JM. Primary dysmenorrhea in young Western Australian women: prevalence, impact, and knowledge of treatment. *J Adolesc Health* 1999; 25:40-5.
17. ACOG Committee Opinion. Number 310, April 2005. Endometriosis in adolescents. *Obstet Gynecol* 2005;105:921-7.
18. Coco AS. Primary dysmenorrhea. *Am Fam Physician* 1999;60:489-96.
19. Davis AR, Westhoff C, O'Connell K, Gallagher N. Oral contraceptives for dysmenorrhea in adolescent girls: a randomized trial. *Obstet Gynecol* 2005;106:97-104.
20. Dawood MY. Primary dysmenorrhea: advances in pathogenesis and management. *Obstet Gynecol* 2006 ;108:428-41.
21. Laufer MR, Sanfilippo J, Rose G. Adolescent endometriosis: diagnosis and treatment approaches. *J Pediatr Adolesc Gynecol* 2003;16(3 Suppl):S3-11.
22. Rapkin A, Howe C. Pelvic pain and dysmenorrhea. In: Berek J, Adashi E, Hillard P, editors. *Berek & Novak's Gynecology*. 14th ed. Philadelphia : Lippincott Williams&Wilkins; 2007. p. 505-40.
23. Speroff L, Fritz M. Menstrual disorders. *Clinical Gynecologic endocrinology and infertility*. 7th ed. Philadelphia: Lippincott Williams&Wilkins; 2005. p. 531-46.
24. Zhang WY, Li Wan PA. Efficacy of minor analgesics in primary dysmenorrhoea: a systematic review. *Br J Obstet Gynaecol* 1998;105:780-9.

ความชุกของภาวะปวดประจำเดือนในกลุ่มนักเรียนมัธยมศึกษาตอนปลายในจังหวัดขอนแก่น

เยาวภา จงเป็นสุขเลิศ, ศรีนารี แก้วฤดี, สุกรี สุนทรภา, ชวนชม สกนธวัฒน์

วัตถุประสงค์ : เพื่อประเมินหาความชุกของภาวะปวดประจำเดือนในกลุ่มนักเรียนมัธยมศึกษาตอนปลาย และผลกระทบต่อกิจกรรมเกี่ยวกับการศึกษา และประสบการณ์ในการบรรเทาอาการปวดประจำเดือน

ชนิดการวิจัย : การวิจัยเชิงพรรณนา

กลุ่มตัวอย่าง : นักเรียนหญิงชั้นมัธยมศึกษาตอนปลายของโรงเรียนสาธิตคณะศึกษาศาสตร์ มหาวิทยาลัยขอนแก่น โรงเรียนกัลยาณวัตร และโรงเรียนขามแก่นนคร จังหวัดขอนแก่น จำนวน 575 คน

วิธีดำเนินการวิจัย : โดยการตอบแบบสอบถามที่ประกอบด้วยข้อมูลทั่วไป อาการปวดประจำเดือน และความรุนแรงของการปวด ลักษณะของประจำเดือน อาการที่สัมพันธ์กับอาการปวดประจำเดือน ผลกระทบต่อกิจกรรมเกี่ยวกับการศึกษา และประสบการณ์ในการบรรเทาอาการปวดประจำเดือน

ผลการวิจัย : พบความชุกของภาวะปวดประจำเดือนในประชากรกลุ่มศึกษาร้อยละ 84.9 โดยมีอาการปวดเล็กน้อย ปวดปานกลาง และปวดรุนแรง คิดเป็นร้อยละ 11.9, 62.3 และ 25.8 ตามลำดับ อาการที่สัมพันธ์กับอาการปวดประจำเดือนที่พบมากที่สุดสามอันดับแรกคือ อารมณ์แปรปรวน (ร้อยละ 84.8) เหนื่อยเพลีย (ร้อยละ 70.7) และปวดหลัง (ร้อยละ 63.7) ผลกระทบเกี่ยวกับกิจกรรมการศึกษาพบว่าอาการปวดประจำเดือนมีผลทำให้สมาธิในการเรียนลดลง ร้อยละ 74 และมีผลทำให้ขาดเรียนร้อยละ 18.2 ส่วนประสบการณ์ในการบรรเทาอาการปวดประจำเดือนจากการศึกษานี้พบว่า ร้อยละ 89.3 นอนพัก และร้อยละ 77.9 รับประทานยาแก้ปวด สำหรับยาแก้ปวดที่ใช้บรรเทาอาการปวดประจำเดือน ร้อยละ 73.4 ตอบว่าใช้อะเซตามิโนเฟน มีเพียงร้อยละ 16.4 ที่ใช้ยาที่มีเฟนนาไมกแอสิดในการบรรเทาปวด

สรุป : อาการปวดประจำเดือน เป็นปัญหาที่พบได้มากในกลุ่มนักเรียนมัธยมศึกษา ซึ่งภาวะนี้มีผลกระทบต่อกิจกรรมทางการศึกษา ผู้ที่มีอาการปวดประจำเดือนส่วนใหญ่มีประสบการณ์ในการ ใช้ยาอะเซตามิโนเฟน เพื่อบรรเทาอาการปวดประจำเดือน
